# 07 30 00 • SHINGLES

## SECTION INCLUDES

Shingles
Underlayment
Rubberized Membrane
Fasteners
Flashing
Attic Ventilation

## RELATED SECTIONS

| | |
|---|---|
| 02 60 00 | Building Demolition |
| 06 10 00 | Rough Carpentry |
| 07 20 00 | Building Insulation |
| 07 45 00 | Gutters and Downspouts |
| 07 46 00 | Prefinished Metal Trim |

For Contracts estimated over $100,000 that are predominately Roofing Work the DCAM category for the General Contractor should be Roofing. An alternative is to have the DCAM category as General Building Construction but will require filed sub-bids for the roofing. This requirement needs to be clearly spelled out in the Advertisement.

**Filed Sub Bid**

**M.G.L. c.149 §44F**

*When replacing shingle roofs are part of a larger General Contract, Roofing is a stipulated filed sub-bid category under M.G.L. Chapter 149, §44F. While different types of roofing are typically specified in different specification sections, if the project's total cost is over $100,000 and the cumulative estimated value of all roofing work exceeds $20,000.it triggers the filed sub-bid requirement. It is then better to specify all roofing work in a single section to avoid confusion.*
DHCD has a standard specification that can be used for procuring a

## INVESTIGATION AND RESEARCH

Check for rotted and delaminated sheathing. This may be especially apparent in areas where leaks and water stains are visible as well as around chimneys and other roof penetrations. It will be necessary to verify the actual thickness of the existing sheathing. The size specified on the original plans may not be a guarantee of the actual size.

Check for existing step flashing; in many instances it may be missing.

Verify the exact number of layers of existing shingles. Completely stripping and recycling of existing shingles is always encouraged. When re-roofing multiple buildings check every building for the number of existing layers of shingles

Calculate the amount of attic ventilation, if more is required ridge and soffit venting is preferred.

Specify safety anchors on all roofs that do not currently have them installed.

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## TECHNICAL STANDARDS

**SHINGLES**

### MATERIALS

Class "A" label fiberglass shingles that meet ASTM 3462 are preferred. Organic shingles are acceptable.

Shingles must carry a 30 year minimum warranty. Higher grade shingles may be used if the LHA has reserve funding to offset the additional initial cost of materials

Architectural Shingles are preferred because installation is usually less labor intensive and worth the investment in the total cost of installation.

Install Ridge Anchors similar to U.S. Safety Equipment RIDG-2 to be left permanently at the ridge of all roofs.

### DESIGN

Carefully detail flashing and connections where the roof pitch changes slope, especially from a steeper to a shallower pitch, or where a roof meets a wall.

Woven valleys or closed cut valleys .should always be used – run a full width of rubberized membrane up the entire length of all valleys. Open valleys are not acceptable.

Minimize the number of penetrations. Develop details, or refer to the manufacturer's details, for each type of penetration including: skylights, hatches, and exhaust and plumbing vents.

Avoid dark brown and black shingles because they tend to build up and retain heat, and therefore have a shorter lifespan.

### EXECUTION

Always strip existing shingles and renail sheating before reshingling.

Follow manufacturer's recommendations to ensure proper installation and not void the warranty.

For asphalt shingles, follow the installation requirements of the Asphalt Roofing Manufacturing Association. www.asphaltroofing.org

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## UNDERLAYMENT

### MATERIALS

Follow the recommendations of the shingle manufacturer for felt underlayment.
Use rubberized membrane (such as one of the Ice and Water products made by W.R. Grace) at valleys and at eave flashing to three feet inside of the heated wall perimeter line of the building.

Use at the ridge and along rake is not necessary unless specific job conditions warrant.

Most manufacturers make a variety of similar products, select the appropriate product for the project.

### DESIGN

Run underlayment beneath the drip edge along the rake.

### EXECUTION

Install only as much of the felt underlayment that will be covered by shingles on the same day. Prolonged exposure to the weather creates wrinkles and leads to poor installation.

## FASTENERS

### MATERIALS

Use hot-dipped galvanized roofing nails to fasten shingles because of their strong holding power.

Staples are not acceptable because they tend to punch through shingles.

Power nailing needs to be monitored closely.

Some power nailing equipment use lesser quality nails that have been known to have the heads pop off after installation, and are not acceptable.

### EXECUTION

Always specify that the existing sheathing is to be renailed after stripping off existing shingles

Use of nail guns needs to be monitored closely. There is power nailing equipment that does an acceptable job. Some of the common problems include having the nail heads punch through the shingles, leaving the heads up to high, having the nail heads pop off, or having the nail driven in at an angle leaving a sharp edge that cuts through the top shingle. The latter is usually caused by a roofer trying to reach to far with a nail gun.

## FLASHING

### MATERIALS

Flashing materials must be compatible with the specifications of the roofing system's manufacturer.

For chimneys, use copper flashing only.

For step flashing at side walls use aluminum or copper ; avoid galvanized steel.

Always use an aluminum drip edge with a minimum 8" upturn leg.

### EXECUTION

Refer to the Sheet Metal and Air Conditioning Contractors National Association design manual for details and installation standards. www.smacna.org

## ATTIC VENTILATION

### DESIGN

Always aclaculate the existing ventillation to determine if addition ventilation may be necessary

Ridge vents with soffit vents is the preferred approach to venting attics.

If there are exsiting gable vents do not add ridge vents. If necessary block off existing gable vents and add new ridge and soffit venting

### MATERIALS

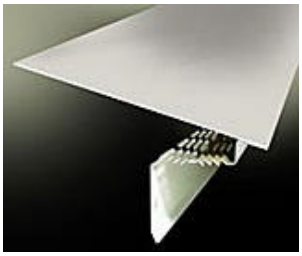
Use heavy PVC ridge vents (such as Shingle Vent II by Air Vent Inc.);.

Always specify a ridge vent with baffles, roll type ventilation tends to get crushed and may not create the correct dynamic for good ventilation.

The goal is to allow proper ventilating air in without letting in rain and snow.

Use perforated vinyl soffits, or fabricated continuous aluminum soffit vents, 1 to 2 inches wide with insect screens or fine holes.

In retrofit situations where there is no overhang and no soffit ventilation consider a vented drip edge similar to Air Vent Pro Flow or Bendtek.



Coordinate location of ventilation with location of piping and other items in ventilated spaces. These items may be susceptible to cold and freezing temperatures which may be intensified by the ventilation.
Also check the building insulation to ensure that adding soffit venting does not create a heating leak at the wall roof intersection which will create ice damming issues as well as make heating the units more costly.